

What is claimed is:

1. An exhaust gas purifying apparatus in an internal combustion engine provided with an intake path, and a plurality of parallel exhaust paths including at least first and second exhaust paths, the apparatus being **characterized by:**

catalysts respectively arranged in the plurality of exhaust paths for purifying unclean substances contained in exhaust gas;

a first exhaust gas recirculating path for supplying the exhaust gas from the first exhaust path to the intake path;

a second exhaust gas recirculating path for supplying the exhaust gas from the second exhaust path to the intake path;

a flow rate adjusting section adjusting a flow rate of the exhaust gas discharged from the first exhaust path to a downstream side, and a flow rate of the exhaust gas supplied to the intake path from the first exhaust path via the first exhaust gas recirculating path; and

a control section controlling the flow rate adjusting section on the basis of information relating to the temperature of at least one of the catalysts, the control section controlling the flow rate adjusting section in such a manner that a ratio of the flow rate of the exhaust gas discharged from the first exhaust path with respect to the flow rate of the exhaust gas discharged from the other exhaust paths than the first exhaust path becomes smaller in a case that the temperature exists in a preset low temperature region than in other cases.

2. An exhaust gas purifying apparatus in an internal combustion engine provided with an intake path, and parallel first and second exhaust paths, the apparatus being

**characterized by:**

catalysts respectively arranged in the first and second exhaust paths for purifying exhaust gas;

5 a first exhaust gas recirculating path for supplying the exhaust gas from the first exhaust path to the intake path;

a second exhaust gas recirculating path for supplying the exhaust gas from the second exhaust path to the intake path;

10 a flow rate adjusting section adjusting a flow rate of the exhaust gas discharged from the first and second exhaust paths to a downstream side, and a flow rate of the exhaust gas supplied to the intake path from the first and second exhaust paths via the corresponding exhaust gas recirculating  
15 path; and

a control section controlling the flow rate adjusting section on the basis of an information relating to the temperature of at least one of the catalysts, the control section controlling the flow rate adjusting section in such a  
20 manner that a ratio of the flow rate of the exhaust gas discharged from the first exhaust path with respect to the flow rate of the exhaust gas discharged from the second exhaust path becomes smaller in a case that the temperature exists in a preset low temperature region than in other  
25 cases.

3. The exhaust gas purifying apparatus according to claim 1 or 2, **characterized by** a variable nozzle type turbocharger supplying an air by utilizing a exhaust gas  
30 flow, the turbocharger including a turbine portion provided at lease one of the first and second exhaust paths,

wherein the flow rate adjusting section is provided with the turbine portion and a flow rate adjusting valve adjusting a flow rate in at least one of the exhaust gas  
35 recirculating paths,

wherein the exhaust gas recirculating path is connected to a portion of the exhaust path in an upstream side of the turbine portion, and

wherein the control section controls an opening degree of a vane provided in the turbine portion, and an opening degree of the flow rate adjusting valve.

4. The exhaust gas purifying apparatus according to claim 1 or 2, **characterized by** an exhaust throttle valve provided in a portion of the first exhaust path in a downstream side of a joint portion between the first exhaust gas recirculating path and the first exhaust path,

wherein the flow rate adjusting section is provided with the exhaust throttle valve, and a flow rate adjusting valve adjusting a flow rate in at least one exhaust gas recirculating path, and

wherein the control section controls an opening degree of the exhaust throttle valve, and an opening degree of the flow rate adjusting valve.

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5. The exhaust gas purifying apparatus according to claim 2, **characterized in that** the flow rate adjusting section is provided with a first exhaust valve provided in a portion of the first exhaust path in a downstream side of a joint portion between the first exhaust gas recirculating path and the first exhaust path, and a second exhaust valve provided in a portion of the second exhaust path in a downstream side of a joint portion between the second exhaust gas recirculating path and the second exhaust path, and

wherein, in the case that the temperature exists in the low temperature region, the control section minimizes an opening degree of the first exhaust valve and maximizes an opening degree of the second exhaust valve.

6. The exhaust gas purifying apparatus according to

claim 5, **characterized in that** the flow rate adjusting section is further provided with a first recirculating valve provided in the first exhaust gas recirculating path, and a second recirculating valve provided in the second exhaust gas recirculating path, and

wherein, in the case that the temperature exists in the low temperature region, the control section maximizes an opening degree of the first recirculating valve maximum and minimizes an opening degree of the second recirculating valve.

7. The exhaust gas purifying apparatus according to any one of claims 1 to 6, **characterized in that** the control section controls the flow rate adjusting section in such a manner that the exhaust gas is not discharged from the first exhaust path in the case that the temperature exists in the low temperature region.

8. The exhaust gas purifying apparatus according to any one of claims 1 to 7, **characterized in that** the information relating to the temperature of the catalyst includes an exhaust gas temperature detected by a temperature detector.

9. An exhaust gas purifying method in an internal combustion engine provided with an intake path and parallel first and second exhaust paths, **characterized by**

purifying exhaust gas discharged from the first and second exhaust paths by catalysts respectively provided in the first and second exhaust paths;

recirculating the exhaust gas to the intake path from the first exhaust path;

recirculating the exhaust gas to the intake path from the second exhaust path;

acquiring information relating to a temperature of at

least one of the catalysts; and

controlling a flow rate of an exhaust gas discharged to a downstream side from the first and second exhaust paths and a flow rate of an exhaust gas recirculated to the intake path  
5 from the first and second exhaust paths in such a manner that a ratio of the flow rate of the exhaust gas discharged from the first exhaust path with respect to the flow rate of the exhaust gas discharged from the second exhaust path becomes smaller in the case that the temperature exists in a preset  
10 low temperature region than other cases.

10. The exhaust gas purifying method according to claim 9, **characterized in that** a first exhaust valve is provided in the first exhaust path, a second exhaust valve is  
15 provided in the second exhaust path, a first recirculating valve is provided in a first exhaust gas recirculating path recirculating the exhaust gas to the intake path from the first exhaust path, and a second recirculating valve is provided in a second exhaust gas recirculating path  
20 recirculating the exhaust gas to the intake path from the second exhaust path, and

wherein the method further comprises minimizing the opening degrees of the first exhaust valve and the second recirculating valve and maximizing the opening degrees of the  
25 second exhaust valve and the first recirculating valve.